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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,207	09/21/2001	Leigh Albert Sullivan	CULLLP0161US	6743

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RENNER OTTO BOISSELLE & SKLAR, LLP  
1621 EUCLID AVENUE  
NINETEENTH FLOOR  
CLEVELAND, OH 44115

EXAMINER

CROSS, LATOYA I

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 01/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/937,207	<b>Applicant(s)</b> SULLIVAN ET AL.	
	<b>Examiner</b> LaToya C. Younger	<b>Art Unit</b> 1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 55-73 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 55-73 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

This Office Action is in response to Applicants' amendments filed on September 28, 2005. Claims 55-73 are pending.

***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 55-64, 67, 70-73 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 4,238,198 to Swaim et al.

Swaim et al disclose a method and apparatus for determining total inorganic sulfur. The apparatus comprises a reaction chamber (flask 120), a means for introducing a reducing agent (contained in flask 120), a means for measuring the amount of hydrogen sulfide evolved (spectrometer), a detector (88) and tube (58) as a conduit into the detector. The means for measuring is a UV spectrometer, which also serves as a means for detecting reduction or cessation of hydrogen sulfide evolution. Swaim et al disclose a source of a carrier gas (144), which is gas inlet tube. The reference discloses that the gas is an inert gas such as argon or another noble gas (col. 1, line 66 – col. 2, line 6). With respect to the heating means, Swaim et al disclose the flask (120) is adapted to be heated by an electrothermal agitator (col. 7, lines 60-63). With respect to the condenser, Swaim et al disclose a condenser section (124) having a condenser (134) cooled by water (refrigerated fluid) circulating through a water inlet (col. 7, lines 53-56). The reference discloses that a light signal from the detector is processed and the results of the evolution of hydrogen sulfide are recorded (col. 5, lines 29-39). At col. 5, lines 40-59, Swaim et al disclose a purge chamber (10) and vent (38). Argon gas and sample are removed from the system by way of the purge chamber (10) and vent (38), similar to Applicants' claimed trap. The

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reference further discloses that the inorganic sulfur content may be determined in samples of salt matrices. The reservoirs for maintaining the reagents used in the apparatus (acid, ethanol) are in the form of flasks.

Swaim et al differ from the instant invention in that a control means for controlling at least the operation of the detection means is not disclosed. However, it would have been obvious to one of ordinary skill in the art to incorporate a computer means into the device of Swaim et al to control the operation of the device in a automated manner. Such modification would alleviate the need for user intervention and would prevent errors caused by user intervention. Thus, more accurate results would be provided. See MPEP 2144.04 (III), citing In re Venner, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958), where it states that "providing an automatic or mechanical means to replace a manual activity which accomplished the same results is not sufficient to distinguish over the prior art".

3. Claims 65, 66, 68 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swaim et al in view of "Chromium Reducible Sulfur" by Sullivan et al.

The disclosure of Swaim et al is described above.

Swaim et al differs from the instant invention in that the reference fails to teach Cr, Sn or Hg as reducing agents (claims 65, 66, 68 and 69).

Sullivan et al teach that chromium powder (chromous chloride) may be used in measuring reduced inorganic sulfur compounds. Sullivan et al teach that in using chromium powder, the method is specific to inorganic sulfur compounds and is not affected by sulfur in organic matter or sulfates. It would have been obvious to one of ordinary skill in the art to use chromium powder in determining the presence of inorganic sulfur compounds in a sample due to its specificity for inorganic sulfurs, while being unaffected by organic sulfurs. In using

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chromium powder, one could ascertain the true amount of inorganic sulfurs in a sample without needing to take ancillary measures to exclude the measurement of organic sulfurs in the test results.

#### *Response to Arguments*

4. Applicant's arguments filed September 28, 2005 have been fully considered but they are not persuasive. With respect to the Swaim et al reference, Applicants argue that 1) no control means is disclosed in Swaim et al and 2) no trap is disclosed.

With respect to the control means for controlling the operation of the device, such would have been an obvious modification of Swaim et al. Swaim et al disclose that the flow rate of gas and sample throughout the device must be controlled, presumably by the operator. The skilled artisan would have been motivated to make this "controlling" an automatic process to reduce any errors caused by errors on the part of the operator. Such would assure more accurate results. Further, MPEP 2144.04 states the making a manual activity automated does not distinguish an invention over the prior art.

With respect to the trap, Swaim et al disclose a purge chamber (10) and vent (38) that allow argon gas and sample to be removed from the system. Thus, the reference does teach a trap for removing evolved gas from the apparatus.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya C. Younger whose telephone number is 571-272-1256. The examiner can normally be reached on Monday-Thursday from 8:30 a.m. - 5:00 p.m., and on alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Jill Warden  
Supervisory Patent Examiner  
Technology Center 1700